ABSTRACT

In a first embodiment, an applications programming interface (API) implements and manages isochronous and asynchronous data transfer operations between an application and a bus structure. During an asynchronous transfer the API includes the ability to transfer any amount of data between one or more local data buffers within the application and a range of addresses over the bus structure using one or more asynchronous transactions. An automatic transaction generator may be used to automatically generate the transactions necessary to complete the data transfer. The API also includes the ability to transfer data between the application and another node on the bus structure isochronously over a dedicated channel. During an isochronous data transfer, a buffer management scheme is used to manage a linked list of data buffer descriptors. During isochronous transfers of data, the API provides implementation of a resynchronization event in the stream of data allowing for resynchronization by the application to a specific point within the data. Implementation is also provided for a callback routine for each buffer in the list which calls the application at a predetermined point during the transfer of data. An isochronous API of the preferred embodiment presents a virtual representation of a plug, using a plug handle, to the application. The isochronous API notifies a client application of any state changes on a connected plug through the event handle. The isochronous API also manages buffers utilized during a data operation by attaching and detaching the buffers to the connected plug, as appropriate, to manage the data flow.